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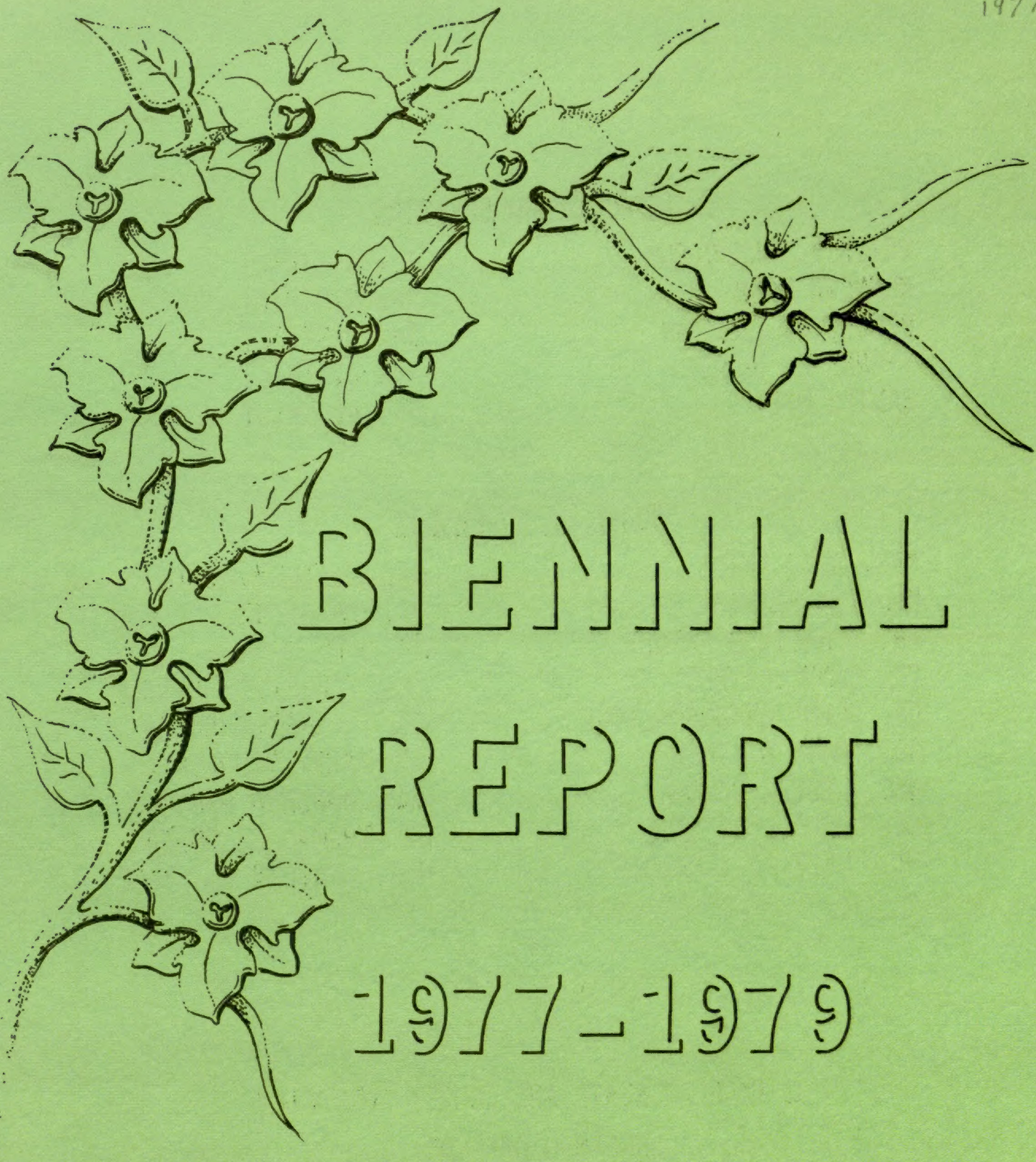

# BIENNIAL REPORT

## 1977-1979

COUNTY OF LOS ANGELES
DEPARTMENT OF ARBORETA & BOTANIC GARDENS

SHOUT
SHARE
IT

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| KENNETH HAHN | 2ND DISTRICT |
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FRANCIS CHING
DIRECTOR

LOS ANGELES STATE AND COUNTY ARBORETUM
DESCANSO GARDENS
SOUTH COAST BOTANIC GARDEN

COUNTY OF LOS ANGELES
DEPARTMENT OF
ARBORETA AND BOTANIC GARDENS
301 NORTH BALDWIN AVENUE, ARCADIA, CALIFORNIA 91006
TELEPHONE: (213) 446-8251

FRANCIS CHING
DIRECTOR

February 25, 1980

Honorable Board of Supervisors
County of Los Angeles
383 Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Gentlemen:

In accord with the prevailing financial conditions in the County, this Department has continued to pursue in the 1977-79 biennium a policy aimed at maximizing operating efficiency while maintaining essential services to the public.

I am pleased to report that we have been largely successful in our efforts despite a loss of 41.6 positions over the last four years, which includes the first year of operation under Proposition 13. This drop in budgeted positions -- from 150.5 to 108.9 -- has been partially balanced in two ways; one, by reorganizing work priorities and procedures, the other by the steady growth of the volunteer organizations at each of our gardens.

In terms of service and money, these organizations have provided major assistance. In this biennium, cash and non-monetary donations from the California Arboretum Foundation exceeded $200,000 in addition to the approximately $550,000 raised for the proposed Hall of Environmental Education. The Descanso Gardens Guild has raised close to $700,000 toward the construction of a much-needed education, exhibition, and administration building in addition to meeting various maintenance needs at Descanso. The South Coast Botanic Garden Foundation paid $32,000 to the County toward its pledged payment of construction costs for the Administrative-Public Services Center, and another $12,000 for various garden needs and improvements.

The cash value of the services supplied by these organizations, though difficult to appraise in numbers, is at least the equal of the monetary donations. To them, therefore, I wish again to express my deep appreciation for their efforts; and to the Board of Governors, the Southern California Camellia Council, and the entire staff, my thanks for their continued cooperation and support.

Very truly yours,

Francis Ching
Director

FC:jlg

# LOS ANGELES STATE AND COUNTY ARBORETUM

This section of the Biennial Report covers field work at the Arboretum -- grounds development and maintenance -- uses of Arboretum facilities by garden clubs, horticultural societies and the like, weather summation, and major special events. Public service activities by the Arboretum superintendent, horticulturist, orchidist, horticultural consultant, and assistant nurserymen are described or included under the Public Services heading.

## General Maintenance

Weeding, watering, pruning, sprinkler repair and other routine maintenance requirements were continued as in the previous biennial period. Additionally, rusted-out water lines in the Meadowbrook and Asian sections were replaced and mowers and a 30-gallon sprayer were rebuilt.

## Major Long-Term Projects

### South African Section -

A considerable number of the ornamental plants in the Southern California landscape come from South Africa, many of them introduced by the Los Angeles State and County Arboretum. Because these plants have done well here, the Arboretum has started a project that will add new varieties to the existing collection. A large area has been landscaped with a wide selection of aloes which provide for a colorful floral display during the winter months. Another area will display a combination of colorful groundcovers, shrubs and bulbous material while a third area will display the more succulent material including mass displays of agapanthus and urginea.

### Australian Section -

The Australian Section is the largest geographical entity represented at the Arboretum. It contains the largest collection of eucalyptus species outside Australia as well as many other plant groups, including acacias, callistemons, melaleucas, and xanthorrheas. A mulching program initiated over 10 years ago has been expanded to further reduce the high soil nutrient and moisture holding capacity, more even soil temperatures throughout the year as well as an important means of weed control and deterrent against a loss of moisture. Trees and shrubs that are of no horticultural or botanical value are being removed to provide space for the testing of new plant material.

### Herb Garden -

In the first quarter of this biennial period, plans were drawn up to improve the public amenities of the Arboretum's 1.2-acre herb garden. The first step called for paving the dirt paths in the garden, often muddy as a result of runoff from rain or from sprinklers. By the end of this biennium, approximately 80 percent of the paving, composed of white flagstones cut from Palos Verdes rock, had been completed. The Southern California Unit of the Herb Society of America, whose members help maintain the garden, contributed $750 toward project costs. An interpretive center, sponsored by the Hancock Park Garden Club, consisting of a display case, a shelter, and benches is the next development scheduled for the garden.

Prehistoric and Jungle Garden -

This once overgrown area has been turned into an attractively landscaped garden that includes an interpretive center describing the historical, environmental, and botanical features represented there. One of the central attractions is the cycad collection, enlarged in this biennial period by the addition of 40 specimens. The plants, representing plants that thrived over 200,000,000 years ago, were donated by the University of Chicago. To facilitate and control public use of the garden, a new rail fence was installed.

Safety -

The potential damage to persons and property from falling tree branches is of continuing concern to local governments and their agencies. It is of particular concern to the Department of Arboreta and Botanic Gardens, which has thousands of trees growing at its three gardens, trees collected and nurtured for the education and pleasure of the public. To minimize the hazard, the Department conducts a regular survey of the trees in its three gardens, pruning branches or removing entire trees as conditions indicate. As an index of the extent of these measures, 48 diseased trees were removed at the Arboretum in this biennum and 10 trees were correctively pruned.

Completed Projects

Enlarged Show Area -

In 1975, a 12,600-square-foot shade area was constructed to provide cover for major outdoor events such as the Baldwin Bonanza and the Fern Show. The functional success of the cover and the expansion of the Bonanza and other shows prompted construction of the framework for an additional 7,280 square feet which was built in the last half of this biennium. The saran covering protects people and sensitive plants from the sun and heat in the summer yet can easily be taken down when such protection is not needed.

Other completed projects in this biennial period were:

Construction of a three-foot-high railroad tie retaining wall, with five-foot high wood fence above, along one side and one end of the new research greenhouse, totaling 100 feet in length. Also built three-foot high, 20-feet long concrete retaining wall along the north end.

Installed underground drip irrigation system in the Rose Garden.

Installed original E. J. Baldwin wrought-iron gates at entrance to Santa Anita Depot. This serves to separate the parking area from the entryway and also enables the public to see this piece of original craftsmanship from the Baldwin era.

Constructed two wood benches for public convenience, one outside Tropical Greenhouse, the other at the northern end of the main formal lawn.

Installed four-inch water line at San Jose Creek Test Station for the reclaimed water project.

Extended railing and fences at tram-loading area for better control of tour passengers.

Installed header boards and new sprinklers in Herb Garden.

Built information booth for Rotunda.

Constructed two steel cages to enclose and protect corn machines from vandalism.

Built new path on north side of Tropical Bowl on Tallac Knoll.

Constructed mist chamber for nursery.

Horticultural Section

A major horticultural undertaking for the Arboretum nursery apart from routine propagation activities is the growing of trees for Arbor Day. Through its Education Division, the Department conducts an Arbor Day program each year for and in cooperation with an average of 1,000 secondary schools in the county. A living symbol of this program is a tree given to each school for planting on campus grounds. In this biennium, 2,300 trees were grown at the Arboretum for Arbor Day distribution to each of the Department's gardens. The trees were in five-gallon cans at the time of distribution. Another special function of the horticultural section is providing decorative plants for displays in key Arboretum areas.

Special Events, Meetings

Queen Anne Frolic -

The fourth biennial Queen Anne Frolic at the Arboretum was held the evening of September 23, 1977. Like its predecessors, it was a popular success, attended by over a thousand members and guests of the sponsoring California Arboretum Foundation and the staff of the Los Angeles State and County Arboretum. A net of $13,000 was raised, the monies added to the growing fund for the Hall of Environmental Education. The program was put together by Frolic Chairman Mrs. David Stevenson, Vice Chairman Mrs. David Malafronte, and Arboretum Superintendent John Provine.

Baldwin Bonanza -

The annual Baldwin Bonanza is the oldest of the Arboretum's fund-raising events. Numbers VIII and IX were held on the first Sunday in May in this biennial period. The Bonanzas are once-a-year plant sales featuring plants that are either hard-to-find, unusual, Arboretum introductions or all three. Presented by the California Arboretum Foundation, the Los Angeles State and County Arboretum, and Superintendent John Provine, they are by now smoothly-run affairs held under the 12,600-square-foot saran-covered area west of the Garden for All Seasons. The 1978 Bonanza was chaired by California Arboretum Foundation member Jean Atkinson; the 1979 Bonanza by California Arboretum Foundation member Marj Roos and Superintendent John Provine.

Spring Extravaganza -

This annual, two-day event, sponsored by the California Arboretum Foundation and the Los Angeles State and County Arboretum and held each spring, is designed to give the public a close look at the Arboretum and its operations by holding open house at the greenhouses, nurseries, library, herbarium, and research laboratory, and through special plant displays, demonstrations, and plant clinics set up to answer questions from the public. Over 10,000 people attended the Extravaganza held June 10 and 11, 1978. Because of the difficulties in staging two major events in the spring - this and the Baldwin Bonanza - the Spring Extravaganza has been advanced to the fall and given a new title, Fall Garden Fair.

Flower Shows and other Special Events at the Arboretum

Akebono Bonsai Society Show
American Ivy Society Show
Aril Society International Show
Baikoen Bonsai Society Show
Cactus and Succulent Society Show
Epiphyllum Society Show
Los Angeles International Fern Society Show
Pacific Rose Society Show
Pasadena Horticultural Society Fall Mum Show
San Gabriel Valley American Begonia Society Show
Santa Anita Bonsai Society Show
Satsuki and Azalea Society Show
Southern California Camellia Society Show
Southern California Gladiolus Society Show
Southern California Hemerocallis and Amaryllis Society Show
Southern California Iris Society Winter Show
Southern California Iris Society Spring Show
Temple City Camellia Society Show
Theodore Payne Foundation Lectures
Foothill Art Society

Meetings at the Arboretum

During 1977-79, the Arboretum served as a meeting place for the societies, garden clubs, and civic organizations listed below.

Akebono Bonsai Society
American Ivy Society
Arcadia Garden Club
Arcadia Sierra Madre Newcomers
Aril Society
Board of Governors
Board of Trustees
Cactus and Succulent Society of America
California Association of Nurserymen
California Garden Club
California State Water District
Cymbidium Society
Daffodil Society
Department of Agriculture Pest Control
Entomological Club
Epiphyllum Society

Fern Society
Floralia Guild
Fuchsia Society
Greater Los Angeles Rose Council
Hemerocallis and Amaryllis Society
Herb Society
Highland Garden Club
Hilltoppers Garden Club
Pacific Rose Society
San Gabriel Valley American Begonia Show
San Gabriel Valley Cactus and Succulent Society
San Gabriel Valley Orchid Hobbyists
San Marino Garden Club
Santa Anita Bonsai Society
Society of American Foresters
Southern California Iris Society
Southern California Garden Club
Southern California Gladiolus Society
Southland Orchid Show, Inc.
Temple City Camellia Society

| Weather | 1977-78 | 1978-79 |
|---|---|---|
| Highest Temperature | 110° Sept. 24 | 109° Sept. 9 |
| Lowest Temperature | 37° Jan. 24 | 27° Dec. 8 |
| *Days of Rain | 58 | 58 |
| Rainiest Month | Jan/Mar | Jan/Mar |
| Total Rain | 40.17 inches | 21.48 inches |

*Rain year starts October 1

# DESCANSO GARDENS

In terms of grounds development and maintenance, the amount of work accomplished at Descanso Gardens in this biennial period is similar to the work output in the previous period. Budgetary cutbacks and field personnel losses were largely offset by maximizing work output on top priority jobs and through the assistance of two citizen support groups, the Southern California Camellia Council and the Descanso Gardens Guild

## Rose Gardens

A project undertaken in the last biennial period and aimed at developing and providing space for the Modern Roses section has been completed. Some 250 new roses were added to the section in this biennium including plantings of the 1979 and 1980 All America Rose Selection winners.

## Other Horticultural Development

Approximately a dozen flowering trees were added to the parking landscaping. Included in the plantings were tulip trees (*Liriodendron tulipifera*), floss silk trees (*Chorisia speciosa*), gold medallion trees (*Cassia leptophylla*), empress trees (*Paulownia tomentosa*), and golden trumpet trees (*Tabebuia chrysotricha*).

In a move to lower maintenance costs without loss of landscaping values, a large segment of the front lawn was removed and replaced with ground cover, *Osteospermum fruticosum*. Approximately 10,000 plants were used in the project resulting in an almost year-round display of color.

## Special Events

Christmas Show -

A major attraction each year in Los Angeles is the "Nine Days of Christmas" show staged by the Descanso Gardens Guild with the assistance of the Descanso gardening staff. Attendance for the 1977 and 1978 shows totalled 38,596.

Flower Shows and Other Special Events -

Bonsai Show (2)
Chrysanthemum Show (2)
Camellia Show (2)
Daffodil Show (2)
Paseo por Descanso
Square Dancing on the Green
Mayfield Senior School Glee Club
Arts and Crafts Festival
Palm Crest Glee Club
Tournament of Roses Band
Foothill Youth Orchestra
Variety Show
Glendale College Civic Music Theatre
L.A. Sheriff's Rhythm Posse
Concert on the Lawn
Adult Swing Band of Pasadena
La Canada Players
Dixieland Band

Flower Shows and Other Special Events - con't.

Sweet Adelines of Verdugo Hills
Red Carpet Tea
Fund-Raising Dinner
Folk Dancing Around the World

| Weather | 1977-78 | 1978-79 |
|---|---|---|
| Highest Temperature | 104° Sept. 7 | 109° June 11 |
| Lowest Temperature | 30° Feb. 12 | 21° Dec. 7,8 |
| *Days of Rain | 60 | 56 |
| Rainiest Month | 14.10" March | 8.78" March |
| Total Rain | 46.75 inches | 25.60 inches |

*Rain year begins October 1.

Although this garden can be enjoyed by the casual visitor having no knowledge of its history, it is just that aspect that has attracted worldwide interest. No other garden of its size can claim to have once been the site of a diatomaceous earth mine and then a County trash dump and then, in the face of such unpromising horticultural conditions, succeed in growing a fine collection of plants for public display. This history will unquestionably be a key factor in the development of the garden for years to come, reflected in this and subsequent biennial reports.

## Subsidence

Given the history of the garden, there has been an expected and continued subsidence in different areas, the conditon usually worsened by heavy rainfall. In this biennial period the following areas were affected:

1. Crenshaw Boulevard entranceway -- masonry, gates, asphalt road. County Road Department repaired and raised road level.
2. Northern comfort station -- 31-inch drop corrected but station closed because of damage to sewer line and need for complete replacement.
3. Sprinkler lines -- frequent rupture of sprinkler and other water lines required repair by Mechanical Department.

## Soil Temperature and Gas Generation

Increased soil temperatures resulting from decay of underlying debris and also from sprinkler line breaks, and methane gas generation resulting also from decaying debris, caused damage to new and old landscaping in the midsoutheast perimeter of the garden. Dead plants included four 30-year-old eucalyptus.

## Grounds Development

Main parking area enlarged to accommodate additional 60 cars, bringing total capacity to 300.

Gas collection system completed by Sanitation District. There are now a total of 28 wells, 45 feet deep, located on north and south boundaries.

Landscaping project on the Crenshaw Boulevard slope nearing completion with skyline tree plantings. Landscaping of entrance driveway with agapanthus groupings and ground covers completed.

Shade and skyline trees added to Picnic Lawn Area.

Landscaping of mounds around Garden Center continued with ground cover material donated by Ralph Ota Nursery.

Greenhouse formerly located in the youth education area was moved to an area behind the Garden Center and refurbished with donated materials and materials purchased by the South Coast Botanic Garden Foundation.

## Grounds Maintenance

General maintenance in this biennial period suffered from water shortages caused by breaking of sprinklers (subsidence) and related plumbing problems, reductions in field staff and a severe frost affecting approximately 20 percent of the garden's plant material with consequent extensive use of labor for trimming, plant removal, trash pickup, and corrective cultivation. Maintenance help was received from Foundation volunteers, Boy and Girl Scouts, Department of Public Social Services, Court Referrals, and Harbor Hills Housing Development Youth Summer Program, which supplied five youths giving 200 hours each.

## Flower Shows and Other Special Events

Bromeliad Show
Camellia Show
Children's Day - Amigos del Jardin
Costa Verde Flower Show
Concert, Palos Verdes Symphonic Band
Fiesta de Flores
Cactus and Succulent Show
Flower Arrangement Demonstration
Japanese Garden in Containers
Dahlia Show
Mini Rose Show
African Violet Show
Theodore Payne Foundation Lecture
Christmas Show
Christmas Concert
Festival of Bromeliads
Orchid Show
Rose Show

## Meetings

The following organizations held meetings, luncheons, and seminars at the garden during this biennial period:

Amigos del Jardin
Amigos Arts and Crafts Workshop
Assistance League of San Pedro
California Association of Nurserymen
Costa Verde District
Girl Scouts of America
Gardeneers Garden Club
Inglewood Dahlia Society
Lakewood Women's Club
L.A. County Health Dept.
L.A. County Medical Assoc.
L.A. Men's Garden Club
Montemalaga Girl Scouts

| Weather | 1977-78 | 1978-79 |
|---|---|---|
| Highest Temperature | 98° July 27 | 106° Sept. 25,26 |
| Lowest Temperature | 33° Jan. 11 | 24° Dec. 7,8 |
| *Days of Rain | 56 | 42 |
| Rainiest Month | 9.89" Feb. | 9.35" Jan. |
| Total Rain | 35.46 inches | 21.46 inches |

*Rain year begins October 1

## EDUCATION - PUBLIC SERVICES

Education programs offered by the Department in this biennial period were, in substance, essentially the same as in the previous period. Some cutback occurred in the number of day and evening classes for adults. This resulted from an increase in fees which cosponsoring community colleges had to impose to compensate for the loss of state aid that had previously covered payment of instructors.

### Adult Day and Evening Classes

| | 1977-79 | | 1975-77 | |
|---|---|---|---|---|
| | Classes | Registered Students | Classes | Registered Students |
| Arboretum | 21 | 634 | 32 | 1,310 |
| Descanso Gardens | 6 | 185 | 15 | 546 |
| South Coast | 18 | 429 | 20 | 758 |
| Total | 45 (-32%) | 1,248 (-52%) | 67 | 2,614 |

The above figures show the reduction in the number of classes and registered students in this biennial period compared with the previous period. The subjects offered were essentially the same in both periods: vegetable gardening, poisonous-medicinal-edible plants.

### Minicourses

| | 1977-79 | | 1975-77 | |
|---|---|---|---|---|
| | Courses | Registered Students | Courses | Registered Students |
| Arboretum | 10 | 154 | 9 | 316 |
| South Coast | 3 | 58 | - | - |

A series of intensive short courses designed to accommodate adults wishing to cover a subject in less than a semester period were introduced at the Los Angeles State and County Arboretum in 1972. Presented by the California Arboretum Foundation with members of the Arboretum staff serving as teachers, the courses consisted of two to four 3-hour sessions. In 1978, the South Coast Botanic Garden Foundation presented three minicourses. Although the number of students attending Arboretum minicourses decreased by 51 percent in this biennium, the number of public inquiries indicate strong continued interest in the series. New minicourses are being planned for the following biennial period with course material closely geared to the latest public interests.

## Youth Education Program

The Department's youth education program, composed of after school, Saturday morning, and summer vacation workshops in basic gardening and various nature topics, had to be eliminated mainly because of a loss of positions. Whether this program can be reactivated is uncertain at the time this report is being prepared.

## School Field Trips

Field trips for students of grades 3 through 6 have for many years been a regular part of the curricula in most of the 95 school districts in Los Angeles County. The gardens of the Department of Arboreta and Botanic Gardens have for an equally long time been a featured field stop for most of these schools. The Department has provided two basic areas of study: the relationship of Plants and Man and early California history. These subjects have been presented in accord with approved State of California text books in the social and natural sciences and utilize as a frame of reference the students' own school and home environment. In so doing, they have demonstrably captured the imagination of young minds.

The number of field trips County schools are able to make is determined mainly by the amount of State aid available for busing costs. The tabulation below reveals a 19 percent drop in field trip attendance in this biennial period compared with the previous period.

### Field Trip Attendance 1977-1978

| Supervisorial District | Arboretum | Descanso Gardens | South Coast | Total |
|---|---|---|---|---|
| First | 3,762 | 862 | 62 | 4,686 |
| Second | 2,396 | 2,993 | 2,635 | 8,024 |
| Third | 2,545 | 2,227 | 1,071 | 5,843 |
| Fourth | 1,071 | 1,244 | 1,975 | 4,290 |
| Fifth | 4,550 | 2,028 | 633 | 7,211 |
| Other Counties | 263 | 90 | 130 | 393 |
| Total | 14,587 | 9,444 | 6,506 | 30,447 |

### Field Trip Attendance 1978-1979

| Supervisorial District | Arboretum | Descanso Gardens | South Coast | Total |
|---|---|---|---|---|
| First | 1,309 | 299 | 149 | 1,757 |
| Second | 1,140 | 1,970 | 1,397 | 4,507 |
| Third | 2,152 | 1,590 | 769 | 4,511 |
| Fourth | 1,273 | 810 | 1,753 | 3,836 |
| Fifth | 2,403 | 1,522 | 758 | 4,683 |
| Other Counties | | | | 244 |
| Total | 8,277 | 6,191 | 4,826 | 19,538 |

| | |
|---|---|
| Total Attendance 1977-79 | 49,985 |
| 1975-77 | 62,348 |

Schools making field trips to Department gardens 1977-1979.

LOS ANGELES CITY DISTRICT

Selma Avenue
Lorne Street
Broadacres
Nevada Avenue
Mirman
Miles Elementary
Huntington Drive School
Nora Sterry Elementary
Van Deene Avenue
Toland Way
Parmelee Avenue
Grant Elementary
Wilburn Avenue
Fenton Avenue
52nd Street
Holmes Avenue
Cienega Elementary
Del Amo
Santa Monica Blvd. Elementary
74th Street
109th Street
St. Bred
Longdon
186th Street
Van Gogh
Saticoy
Highlands
Sierra Park
Germain
Manchester
24th Street
Larch
102nd Street
Bryson
First Street
95th Street
Carthey Center
74th Street
95th Street
Purche Avenue
Shirley Avenue
Short Avenue
Miramonte
122nd Street
Tulsa
Limerich
Tel Fair
Delivan Drive
Brooklyn Avenue
Gridley Elementary
Woodlake Avenue
Park Avenue
Century Park
Santa Barbara Avenue
Broadway
75th Street
Brentwood
36th Street
Cantanara
Stoner
Albion
Dixie Canyon
Hooper Avenue
232nd Street
Encino Elementary
Riverside Drive
Fairburn
Hancock Park
Graham Elementary
Missel
Collins Street
Soto Street
Topeka
Malabar
Westminister
Brainard Avenue
Elizabeth Street
Laurel
Pacific Palisades
Kennedy
Budlong
Oxnard
97th Street
Tarzana
112th Street
Russell Elementary
Vine Street
Eshelman
Bryson
Sunny Brae
Lassen
Hopper
61st Street
Grape Street
1st Street

ABC UNIFIED
Melbourne Elementary
Willow
Hawaiian Elementary

ALHAMBRA CITY DISTRICT
Northrup School

ARCADIA UNIFIED
Hugo Reid
Holly Avenue
Camino Grove

AZUSA UNIFIED
Victor Hodge

BALDWIN PARK UNIFIED
Geddes School

BELLFLOWER UNIFIED
Ester Lindstrom Elementary

BONITA UNIFIED
La Verne Heights
Roymon

CHARTER OAKS UNIFIED
Palmview

COMPTON UNIFIED
Charles Bursch
Caldwell School

CULVER CITY DISTRICT
Linwood Howe
Farragut Elementary

DUARTE UNIFIED
Beardsley School
Maxwell School

EAST WHITTIER CITY DISTRICT
East Whittier Intermediate

EL MONTE CITY DISTRICT
Garden Foothills Elementary

GARVEY UNIFIED
Fern Elementary

GLENDALE UNIFIED
Verdugo Woodlands
Horace Mann
Ben Franklin Elementary
Mountain Avenue
John Muir Elementary

GLENDORA UNIFIED
La Setra School
Roosevelt Street

LONG BEACH UNIFIED
Abraham Lincoln School

LOWELL JOINT CITY DISTRICT
Oleta School
Jordan School
Macy School

LYNWOOD DISTRICT
Will Rogers

MONTEBELLO UNIFIED
Suva Elementary
Montebello Gardens
La Merced School
Greenwood Elementary

PASADENA UNIFIED
Edison Street
Longfellow
Webster Elementary
McKinley Fundamental
Washington Center
Monroe Elementary
Hale Elementary
Noyes
San Rafael
Jackson
Linda Vista
Sierra Mesa
Willard

POMONA UNIFIED
San Jose Elementary
Alcott Elementary
North San Antonio
Philadelphia School

SAN MARINO UNIFIED
Carver Elementary
Valentine Elementary

WALNUT VALLEY UNIFIED
Vejar Elementary

WEST COVINA UNIFIED
Monte Vista School
Westcove Elementary
California Elementary
Vine Street
Merced School

WHITTIER CITY DISTRICT
Aeolian Elementary
Sorrenson

## Arbor Day

Almost since its inception, the Department, through its Education Division, has developed an Arbor Day program for the benefit of elementary, junior high, and high schools in Los Angeles County. In 1970, a new program was developed aimed at more closely involving teachers and students in the conservation and environmental principles which are the heart of Arbor Day celebrations everywhere. In California and most other states, Arbor Day is observed on March 7, the birthday of Luther Burbank.

The new program features packets of teacher resource material distributed to school district science curricula coordinators and, for participating schools, the gift of an Arbor Day tree for a ceremonial planting by students somewhere on the school campus. The resource packets contain basic information on the structure and uses of plants and suggestions for classroom projects. Approximately a thousand trees are grown each year at the Arboretum for distribution to the schools. At the time of delivery they are in 5-gallon cans and roughly 10 feet high. The Arbor Day tree selected by the Arboretum for the 1978 program was Prunus cerasifera, a flowering plum that produces masses of white, fragrant blossoms. For 1979, the tree was a new Arboretum introduction, Callistemon 'Red Cascade', a weeping bottlebrush with brilliant red flowers.

Listed on the following pages are the schools that participated in the two Arbor Day observances within this biennial period.

ABC UNIFIED
Aloha Elementary
Bragg Elementary
Cerritos Elementary
Elliott Elementary
Hawaiian Elementary
Juarez Elementary
Kennedy Elementary
Leal Elementary
Melbourne Elem.
Nixon Elementary
Palms Elementary
Haskell Jr. High
Killingworth Jr. High
Tetzlaff Jr. High
Whitney Learning Ctr.

ARCADIA UNIFIED
Baldwin Stocker Elem.
Bonita Park Elem.
Camino Grove Elem.
Highland Oaks Elem.
Holly Avenue Elem.
Hugo Reid Elementary
Longley Way Elem.
Santa Anita Elem.
Dana Jr. High
First Avenue Jr. High
Foothills Jr. High
Arcadia High
Continuation High

AZUSA UNIFIED
Dalton Elementary
Ellington Elementary
Foothill Intermediate
Gladstone Street Elem.
Hodge Elementary
Lee Elementary
Longfellow Elementary
Magnolia Elementary
Mountain View Elem.
Murray Elementary
Oak Grove Elementary
Paramount Elementary
Powell Elementary
Slauson Intermediate
Valleydale Elem.
Azusa High
Gladstone High

BALDWIN PARK UNIFIED
Sierra Vista High

BASSETT UNIFIED
Bassett Elem.
Don Julian Elem.
Erwin Elementary
Flanner Elementary

BASSETT UNIFIED (cont.)
Keenan Elementary
Sunkist Elementary
Torch Jr. High

BELLFLOWER UNIFIED
Baxter Elementary
Jefferson Elementary
Las Flores Elem.
Lindstron Elementary
Mann-Wilson Elem.
Pyle Elementary
Ramona Elementary
Rogers Elementary
Ross Elementary
Thompson Elementary
Woodruff Elementary
Roosevelt Jr. High
Mayfair High
Somerset Continuation

BEVERLY HILLS UNIFIED
Beverly Vista Elem.
El Rodeo Elementary
Hawthorne Elementary

BONITA UNIFIED
Allen Ave. Elementary
Ekstrand Elementary
Gladstone Elementary
La Verne Heights Elem.
Lone Hill Elementary
Miller Elementary
Ramona Intermediate
Roynon Elementary
Shull Elementary
Bonita High
Chaparral High
San Dimas High

CHARTER OAK UNIFIED
Badillo Elementary
Banna Elementary
Cedargrove Elem.
Glen Oak Elementary
Palm View Elem.
Ruddock Elementary
Sunflower Elem.
Washington Elem.
Willow Elementary
Charter Oak High
Royal Oak High
Arrow High

CLAREMONT UNIFIED
Chaparral Elementary
Danbury Elementary
Eleanor Daly Elem.
Mountain View Elem.

CLAREMONT UNIFIED (cont.)
Oakmount Elementary
Sumner Elementary
Sycamore Elementary

COMPTON UNIFIED
Anderson Elementary
Bunche Elementary
Carver Elementary
Emerson Elementary
King Elementary
Lincoln Elementary
Longfellow Elementary
Mayo Elementary
McKinley Elementary
139th Street Elementary
Roosevelt Elementary
Tibby Elementary
Twain Elementary
Washington Elementary
Bunche Jr. High
Enterprise Jr. High
Vanguard Jr. High
Walton Jr. High
Whaley Jr. High
Centennial High
Compton High
Dominguez High

CULVER CITY UNIFIED
Betsy Ross Elementary
La Ballona Elementary
Linda Vista Elementary
Washington Elementary
Culver City Jr. High

DUARTE UNIFIED
Beardslee Elementary
Maxwell Elementary
Royal Oaks Elementary
Valley View Elementary
Andres Duarte Jr. High
Northview Jr. High
Duarte High
Mt. Olive High

EAST WHITTIER CITY DISTRICT
Evergreen Elementary
Hillview Intermediate
La Colima Elementary
Laurel Elementary
Ocean View Elementary
Scott Avenue Elementary

EL RANCHO UNIFIED
Birney Elementary
Magee Elementary
Maizeland Elementary
North Rancho Elementary

EL RANCHO UNIFIED (cont.)
Rivera Elementary
Selby Grove Elementary
Valencia Elementary
Rivera Jr. High
Salazar High

EL SEGUNDO UNIFIED
El Segundo Jr. High

GARVEY SCHOOL DISTRICT
Dewey Ave. Elementary
Duff Elementary
Fern Elementary
Hillcrest Elementary
Marshall Elementary
Rice Elementary
Willard Elementary
Williams Elementary

GLENDALE UNIFIED
Balboa Elementary
Cerritos Elementary
Dunsmore Elementary
Field Elementary
Franklin Elementary
Fremont Elementary
Glenoaks Elementary
Lincoln Elementary
Lowell Elementary
Monte Vista Elem.
Montrose Elementary
Mountain Ave. Elem.
Valley View Elem.
Verdugo Woodlands Elem.
White Elementary

GLENDORA UNIFIED
Bidwell Elementary
Cullen Elementary
Gordon Elementary
La Fetra Elementary
Roosevelt Elementary
Sellers Elementary
Stanton Elementary
Sutherland Elementary
Williams Elementary
Goddard Jr. High
Sandburg Jr. High
Glendora High

HACIENDA-LA PUENTE UNIFIED
Baldwin Elementary
Del Valle Elementary
Dibble Elementary
Glenelder Elementary
Grandview Elementary
Lassalette Elementary
La Subida Elementary

HACIENDA-LA PUENTE (cont.)
Los Altos Elementary
Mesa Robles Elementary
Nelson Elementary
Newton Intermediate
Shadybed Elementary
Sierra Vista Elementary
Sparks Elementary
Sparks Intermediate
Sunset Elementary
Temple Elementary
Valinda Elementary
Wedgeworth Elementary
Willow Elementary
Wing Lane Elementary
Wilson High
La Puente High
Workman High

HAWTHORNE SCHOOL DISTRICT
Eucalyptus Elementary
Jefferson Elementary
Ramona Elementary

HERMOSA BEACH CITY DIST.
Hermosa View Elementary
North Elementary
South Elementary
Hermosa Beach Middle

LA CANADA UNIFIED
Chilao Mountain Elementary
Foothill Intermediate
Oak Grove Elementary
La Canada Elementary
Paradise Canyon Elementary

LAS VIRGENES UNIFIED
Chaparral Elementary
Lupin Hill Elementary
Round Meadow Elementary
Sumac Elementary
White Oak Elementary
Yerba Buena Elementary
Lindero Canyon Elementary
Wright Elementary
Agoura High
Calabasas High

LENNOX SCHOOL DISTRICT
Buford Avenue Elementary
Felton Intermediate
Jefferson Elementary
Larch Avenue Elementary
Whelan Elementary

LITTLE LAKE CITY DISTRICT
Lake Center Elementary
Lakeview Elementary
Orr Elementary
Paddison Elementary
Studebaker Elementary

LOS NIETOS SCHOOL DIST.
Wiggins Elementary

LOWELL JOINT SCHOOL DIST.
Jordan Elementary
Maybrook Elementary
Rancho Canada Elementary
Starbuck Elementary

LYNWOOD UNIFIED
Abbott Elementary
Lincoln Elementary
Lindbergh Elementary
Lugo Elementary
Rogers Elementary
Roosevelt Elementary
Twain Elementary
Washington Elementary
Wilson Elementary
Hosler Jr. High
Lynwood High
Vista High

MANHATTAN BEACH CITY DIST.
Begg Elementary
La Marina Elementary
Meadows Avenue Elementary
Pennekamp Elementary
Robinson Elementary

MONROVIA UNIFIED
Santa Fe Middle

MONTEBELLO UNIFIED
Bell Gardens Elementary
Bella Vista Elementary
Colmar Elementary
Fremont Elementary
Greenwood Elementary
La Merced Elementary
Montebello Gardens Elem.
Montebello Park Elem.
Potrero Heights Elem.
Rosewood Park Elementary
Suva Elementary
Wilcox Elementary
Bell Gardens Intermediate
Eastmont Intermediate
La Merced Intermediate
Macy Intermediate

NEWHALL SCHOOL DISTRICT
Newhall Elementary
Old Orchard Elementary
Meadows Elementary

NORWALK-LA MIRADA UNIFIED
Benton Intermediate
Dolland Elementary
Edmondson Elementary
Escalona Elementary
Gardenhill Elementary
Glazier Elementary
Hutchinson Elementary
Johnston Elementary
McNally Intermediate
Moffitt Elementary
Morrison Elementary
Nottingham Elementary
Rancho Elementary
Glenn High
Norwalk High

PALOS VERDES PEN. UNIFIED
Dapplegray Intermediate
La Cresta Elementary
Ladera Linda Elementary
Lunada Bay Elementary
Miraleste Elementary
Pedregal Elementary
Point Vincente Elementary
Rancho Vista Elementary
Silver Spur Elementary
Soleado Elementary
Valmonte Elementary
Vista Grande Elementary
Miraleste High
Rolling Hills High

PASADENA UNIFIED
Burbank Elementary
Cleveland Elementary
Don Benito Elementary
Edison Elementary
Franklin Elementary
Hale Elementary
Linda Vista Elementary
Loma Alta Elementary
Noyes Elementary
Roosevelt Elementary
Sierra Mesa Fundamental
Washington Elementary
Willard Elementary
Blair High
Muir High
Foothill High

POMONA UNIFIED
Arroyo Elementary
Diamond Point Elementary
Kellogg Elementary
Lincoln Elementary
Lorbeer Jr. High
Garey High

REDONDO BEACH CITY DIST.
Adams Elementary
Andrews Elementary
Beryl Heights Elementary
Birney Elementary
Edison Elementary
Jefferson Elementary
Patterson Elementary
Tulita Elementary
Washington Elementary

ROSEMEAD SCHOOL DISTRICT
Encinita Elementary
Janson Elementary
Muscatel Elementary
Savannah Elementary
Shuey Elementary

SAN GABRIEL SCHOOL DIST.
Coolidge Elementary
Jefferson Intermediate
Madison Elementary
McKinley Elementary
Roosevelt Elementary
Washington Elementary
Wilson Elementary

SAN MARINO UNIFIED
Carver Elementary
Huntington Elementary
Stoneman Elementary
Valentine Elementary
San Marino High

SOUTH PASADENA UNIFIED
El Centro Elementary
Lincoln Elementary
Marengo Elementary
Monterey Hills Elementary
Oneonta Elementary
So. Pasadena Jr. High
So. Pasadena High

SOUTH WHITTIER SCHOOL DIST.
Carmela Elementary
Loma Vista Elementary
Los Altos Elementary
McKibben Elementary
Sunnyside Elementary
Telechron Elementary

SULPHUR SPRINGS UNION DIST.
Cox Elementary
Mint Canyon Elementary
Mitchell Elementary
Soledad Canyon Elementary
Sulphur Springs Elem.

TEMPLE CITY UNIFIED
Cloverly Elementary
Emperor Elementary
La Rosa Elementary
Longden Elementary
Temple City High
South High

TORRANCE UNIFIED
Adams Elementary
Anza Elementary
Arlington Elementary
Calle Mayor Elementary
Casimir Elementary
Fern-Greenwood Elementary
Hickory Elementary
Hull Elementary
Jefferson Elementary
Levy Elementary
Lynn Elementary
Madrona Elementary
Magruder Elementary
Newton Elementary
Parkway Elementary
Perry Elementary
Riviera Elementary
Seaside Elementary
Sepulveda Elementary
Steele Elementary
Torrance Elementary
Towers Elementary
Victor Elementary
Wood Elementary
Wright Elementary
Yukon Elementary
North High
South High
Torrance High
Shery High

WALNUT VALLEY UNIFIED
Collegewood Elementary
Evergreen Elementary
Vejar Elementary
Walnut Elementary

WEST COVINA UNIFIED

California Elementary
Cameron Elementary
Cortez Elementary
Del Norte Elementary
El Dorado Elementary
Hollencrest Elementary
Merced Elementary
Merlinda Elementary
Monte Vista Elementary
Orangewood Elementary
Vine Elementary
Wescove Elementary
Willowood Elementary
Edgewood High
West Covina High
Coronado Continuation

WHITTIER CITY DISTRICT

Franklin Elementary
Longfellow Elementary
Mill Elementary
Orange Grove Elementary

WISEBURN SCHOOL DISTRICT

Anza Elementary
Burnett Elementary
Cabrillo Elementary
Dana Elementary

LOS ANGELES UNIFIED

Distributed to 300 schools

## Plant Science Library

Use of the Arboretum Plant Science Library declined less than one percent in this biennium, a figure which compares most favorably with the general attendance loss at public and private institutions throughout the County, particularly in the last half of this biennial period. This minimal drop in attendance reflects the library's value to the community. In terms of service and ready availability of its resources to the public, it constitutes a major horticultural information resource in the County. The library contains approximately 24,000 catalogued books and pamphlets, and subscribes to 528 periodicals, these figures increased in this biennium by the addition of 348 new books and 15 new journals.

## Historical Section

The Queen Anne Cottage, Coach Barn, Hugo Reid Adobe and Santa Anita Depot constitute the essence of the historical section. These buildings and the land they occupy are the focal points of three centuries of California history and, as a consequence, are the subject of continuing public interest.

The main tasks of the staff assistant curator are maintenance of the interior of the buildings and their contents, ongoing displays, historical research, public tours, acquisition and accessioning of artifacts and development and maintenance of files and photographic and costume collections.

## Public Services

Under its guiding principle that arboreta and botanic gardens are for people, the Department offers a wide range of public services not generally available elsewhere in Los Angeles County.

### 1. Information Center

At the Information Center in each of its gardens, the Department makes available to the public a variety of low cost publications: event calendars, maps, bird lists, education schedules, horticultural bulletins, and information brochures of other gardens. Additionally, the centers provide wheel chairs for the handicapped, first aid kits, and at the Arboretum only, mosquito fish during the summer mosquito season, all these services free. At the Arboretum, plants are accepted from the public and ticketed for identification or horticultural analysis by the staff horticultural consultant. The selling of admission and tram tour tickets at the information centers is done by staff personnel and CETA part-time workers.

2. Publications

Maps, calendars, class schedules, horticultural bulletins and the like are printed by staff personnel as the need arises.

In this biennium, 125,000 copies of 15 horticultural bulletins were reprinted and 23,000 copies of three new bulletins -- begonias, insecticides, fertilizers-- were printed.

A major publication of the Department is the magazine Lasca Leaves. Published by the California Arboretum Foundation since 1951, it is distributed to Foundation members as part of their yearly dues and to educational institutions and botanic gardens all over the world on an exchange basis. Formerly a quarterly, it is now published six times a year as part of the national magazine, Garden, published by the Garden Society of the New York Botanical Garden. The incorporation of Lasca Leaves into Garden as a regional edition took place early in 1977.

3. Articles

Staff members regularly contribute articles to Lasca Leaves and other publications. Following is a list of articles published in this biennium.

Gary Cromwell, Research Division.
"Beauty and Durability: The Spotted Gums"
"Tabebuia, the Trumpet Tree"
"The Majestic Oaks"
"Araucaria: Pines of the Southern Hemisphere" - Lasca Leaves

Leonid Enari, Research Division.
"Vanilla: Flavor from An Orchid:
"Ginger: Spice from the Orient"
"Pepper: Driving Force Behind the Great Explorers"
"Cinnamon: Oldest of All Spices"
"Snow Gums" - Lasca Leaves

Sandy Snider - Assistant Curator, Education Division
"Arboretum Trees Offer Living History" - Pasadena Star News
"A Walk Through History," Arboretum Walking Guide

4. Sunday Walks and Talks

In 1972, the Department introduced a series of year-round Sunday morning walks and Sunday afternoon talks at each of its gardens so that interested people could obtain a more intimate view and insight of the garden. Conducted by members of the staff, both proved to be popular with the public as indicated by a steady level of attendance. Talks and Walks for 1977-79 were:

Talks

Ronald Call, Education Assistant - Arboretum
"Vegetable Gardening (2)
"Growing and Using Annuals

Gary Cromwell, Biologist - Arboretum
"Selected Herbs for Your Garden"
"Medicinal Plants Used by Indians"

David Deardorff, Biologist - Arboretum
"Flower Variations in Orchid Species"

Leonid Enari, Senior Biologist - Arboretum
"Exotic Economic Plants"(2)

Edward Hartnagel, Assistant Superintendent - South Coast
"Outdoor Container Gardening"(2)
"Indoor Container Gardening" (2)

Jeffrey Hook, Education Assistant - South Coast
"Vegetable Gardening" (2)

Charles Lee, Horticultural Consultant - Arboretum
"Growing Bulbs in Containers"

George Lewis, Superintendent - Descanso
"Grafting" (2)
"Lilacs"
"Annuals"

Tim Lorman, Horticulturist - Arboretum
"Bromeliads"

John Provine, Superintendent - Arboretum
"Patio Gardening"

Kenneth Montgomery, Biologist - Arboretum
"Water Conservation"

Walks

Gary Cromwell, Biologist - Arboretum
Trees in the Historical Area

Leonid Enari, Senior Biologist - Arboretum
Tallac Knoll-Aquatic Garden

Don Graf, Tour Guide - Descanso
Native Plant Section

Edward Hartnagel, Assistant Superintendent - South Coast
Aquatic Section (3)

Jeffrey Hook, Education Assistant - South Coast
Fall Flowering Plants
Australian Native Plants

Charles Lee, Horticultural Consultant - Arboretum
Ground Covers (2)

George Lewis, Superintendent - Descanso
Rose Garden (2)
Trees of Descanso

Tim Lorman, Horticulturist - Arboretum
Greenhouses

Kenneth Montgomery - Biologist - Arboretum
Prehistoric and Jungle Garden

Armand Sarinana - Superintendent - South Coast
Lawns and Ground Covers

Sandy Snider - Assistant Curator - Arboretum
Historical Buildings

Gary Wallace, Biologist - Arboretum
Australian Section (2)
Asiatic-North American Section

5. Lectures

Lectures, many with color slides, given by members of the research staff, education, horticulture, library and history staffs to garden clubs, nurserymen's association chambers of commerce, and a variety of civic organizations in this biennium.

Gary Cromwell, biologist - Research Division
Pomona Valley Camellia Society on "Some Shade Plant Characters"
U.S. Forest Service Representatives on "Pollution Resistant and Fire Plants of the Chaparral"
San Dimas-Glendora Garden Club on "Plants of the Bible"
California State Polytechnic University on "Some Observations on World Plant Distribution"

Leonid Enari, senior biologist, Research Division
Lectures on Poisonous and Medicinal Plants to:
American Fern Society
Arcadia Club
California State University at Northridge
Children's Hospital
DuPont Chemical Co., Burbank (2)
Herb Society
Hollywood Women's Club
Long Beach State University
Pasadena City College (2)
Pasadena Girl's Club
Pasadena Nature Center (4)
Pasadena Unified School District Conference
Pharmaceutical Co., Burbank
Saint John's Hospital at Ventura
School of Pharmacy, USC
Sherman Oaks Garden Club
Southern California Dermatologists
Southern Pasadena Women's Club
Whittier College
JPL Staff Members

George Lewis, Superintendent, Descanso Gardens
13 lectures on pruning, grafting, bedding plants at meetings of California Association of Nurserymen.

Sandy Snider, Assistant Curator, Education Division
"History in Women's Fashion Changes" to Calif. State Univ., L.A.
"History of Arcadia", Arcadia-Monrovia Soroptomists
"Arboretum History", District Garden Club
"What is the Arboretum?", Longley Way School
"Women in History", Arcadia High School
"Women's Fashion", Arcadia High School
"The Role of the Local Historical Society", San Gabriel AAUW
"The Baldwin Ranch", California State University, Los Angeles
"The Baldwin Ranch and Anoakia", Arcadia Methodist Church
"The Baldwin Ranch", Alhambra Historical Society
"Hugo Reid and the Adobe", Arcadia Historical Society

Gary Wallace, Biologist, Research Division
Botanical Talks on Plant Day at the Los Angeles Zoo

6. Botanical Information Services

A popular public service provided by the Department at the Arboretum is free horticultural consultation. Anyone can bring in a plant for identification or for guidance in the treatment of disease or other horticultural problems.

In this biennial period, the Horticultural Information Consultant identified approximately 2,000 plants, answered 300 letters and 17,000 telephone inquiries.

7. Special Events, Media Services

The Department supplies the audio-visual, graphic arts, printed matter, special tour and other requirements associated with the flower shows, lectures, concerts, meetings, and special events held at each garden. It is broadly responsible for the safety, conduct, and requests of the 1.2 million people who visit the three gardens annually. Included in these services are the handling of complaints, documenting accidents, assisting the ill or injured, helping to curb vandalism, issuing car passes and wheelchairs, issuing mosquito fish (Gambusia) from an aquarium filled and maintained by tour guides, issuing brochures and other printed information, providing special tours for senior citizens and other minority groups, setting up audio-visual equipment, maintaining and constructing public signs, and looking after the wildlife in each garden, all of which are classified as wildlife sanctuaries.

The Department also serves the community media with news releases, features, photographs, radio-T.V. spot announcements, and arranges and assists television location broadcasts.

## RESEARCH DIVISION

A reduction in personnel in the Research Division over the past two years has resulted in the termination of four ongoing research projects: fire retardant plant project, crape myrtle breeding project, air pollution plant damage project, and the South African trailing daisy root-rot-resistance breeding project.

The effect of these terminations is varied. The investigation of damage to plants from air pollution is of critical importance; however, because the federal government has spent and continues to spend a great deal of money in research grants for this study throughout the country, its termination at the Arboretum is not a major loss. The loss of the crape myrtle project, which was aimed at improving ornamental values and increasing resistance to mildew was unfortunate because it left the project at the halfway mark with a considerable body of unfinished work. The study of fire retardant plants had been going on for many years at the Arboretum, and, although work remains to be done, had produced tangible results in the form of publications useful both to the public and other County agencies. The South African trailing daisy project was exclusive to the Arboretum, which had introduced the plant and made it popular and useful in Southern California. A study to determine the cause of the root-rot that developed would have made its continued wide use along freeways and interchanges practical.

Despite the cutback in local research support, the Department's research activities have been well supported by grants from the National Science Foundation in Washington, D. C. It should be noted that the NSF provides financial support to selected research projects around the country whose proposals are deemed the most relevant to national needs. It is indicative of NSF recognition of this division's value that two of its four submitted proposals were funded in this biennial period.

The titles and objectives of the two funded proposals are:

1) Alternative Biological Sources of Materials -- to meet current future materials resource requirements and to identify and develop domestic sources of or substitutes for raw materials which presently must be imported.

2) Community Water Management -- to address our need for fundamental knowledge and its application regarding the management of water at the community level. The goal is to explore innovations in water and wastewater management to maintain acceptable levels of health, safety, and environmental quality.

The first proposal became the major research project at the Arboretum, a three-year program under the title "Breeding Improvement of Rubber Yield in Guayule." The origin of this program goes back to World War II when the desert shrub guayule, known for its high quality rubber content, was grown extensively in the southwest states for the purpose of furnishing rubber for the war effort. After World War II, the production of synthetic rubber from oil and the resumed supply of natural rubber from abroad made guayule unprofitable and its planatations dwindled and vanished. The Middle East oil crisis in the early seventies has since reversed the situation. Guayule is now recognized as a potential source of natural rubber which can be produced in the United States with the advantage of being able to grow it on semi-arid, marginal land.

In 1977, the NSF gave an initial grant to the Los Angeles State and County Arboretum of $97,536. The goals of the grant, then and now, are to develop higher yielding strains of guayule and to develop methods of culture so as to make the crop commercially feasible. The first task, now completed, was to collect germplasm from all available sources, mainly from the native guayule populations of Mexico, and then begin the long task of selection and hybridization to improve the crop.

In 1978, the NSF made grants of $90,930 to LASCA and $55,896 jointly to LASCA and the U.S. Department of Agriculture. The research objectives of this grant are to identify the chemicals and dosages necessary to cause stimulation of rubber synthesis in the guayule plant. Studies by Dr. Henry Yokoyama of the USDA Fruit and Vegetable Chemistry Laboratory and coinvestigator on the project with Dr. George Hanson of the Arboretum, have shown that rubber yields can be dramatically increased by proper use of the identified chemicals.

Grants to the Arboretum for the 1979-80 period totalled $233,131, divided as follows: $144,056 to LASCA from the NSF; $65,825 jointly to LASCA and the USDA from the NSF; and $23,250 from the California Department of Food and Agriculture to LASCA.

Five full-time research assistants are employed for this project, plus two and one-half research assistants for the cooperative projects with the USDA and one and a quarter for the CFA project. Most personnel came from California Polytechnic University and the University of Santa Barbara.

As a result of the LASCA guayule research projects, the research division and its staff are considered worldwide authorities on guayule and receive numerous requests for seeds and information concerning guayule growth and prospects for commercialization. The division's guayule researchers also serve as consultants to other guayule research projects, maintain contact with commercial rubber companies in the United States, present scientific papers at various professional seminars, and have provided seed to 34 educational, research, and commercial agencies and companies all over the world.

The second funded research project brought a two-year NSF grant in the amount of $76,766 starting in May, 1977. Recycling of municipal sewage water for agricultural and recreational purposes has shown promise as a practical method of waste disposal. However, certain pollution hazards exist resulting from the toxicity of heavy metals and possible infectious diseases found in waste water and sludge. Factors that affect the survival of pathogenic viruses in soil need to be known before any general application of waste water and sludge to land can be safely utilized. The objectives of this NSF grant was to investigate the mechanisms of antiviral activity soil and assess its significance with regard to application of municipal waste water on land used for agricultural purposes. Research has so far shown that antiviral properties in soil vary with soil temperatures, at different depths, and at different sites, and that antiviral activity in soil can be stimulated.

Scientific papers on this project were presented at three-day conferences at the University of New Hampshire (August, 1977) and the 70th Annual Meeting of Soil Science Society of America in Chicago (December, 1978). Nine students from California State Polytechnic University and Long Beach State University served as half-time research assistants on the project.

Copies of the semiannual report are being distributed through the U.S. Department of Commerce in response to requests for research information.

## California Arboretum Foundation

Major achievements of the California Arboretum Foundation in this biennium were centered in the following areas: development of a new fund raising program, a new special event, significant monetary contributions to the Arboretum to help offset a curtailed County budget, and management of a new million dollar endowment for an associated botanic garden.

## Membership

As of June 30, 1979, the organization had 3,056 members. Included in this number is a nine-member Executive Committee which meets monthly to conduct the general business of the Foundation and to make recommendations to the Board of Trustees numbering, in this period, 31 members.

Within the membership are two service groups, Las Voluntarias, composed of 237 women, and Los Ayudantes, composed of 19 men.

An Annual Membership Meeting was held the evening of June 20, 1978, on the lawn north of the Coach Barn. Alice Coulombe, James P. Curry, and Ruth Mary Larson were elected to serve three-year terms as members of the Board of Trustees. Dave W. Paradis, Walter R. Schoenfeld, and William H. Stitt were elected to serve second terms. Morgan Evans and Richard Ray were newly elected to the Board. Mrs. Emma D. Menninger, Mrs. Elmer Sademan, and Mr. Ernest Hetherington received Honorary Life Memberships in recognition of their outstanding contributions to the Arboretum and the Foundation. Mrs. Grace Robinson and Mrs. Ruth Brankey were commended for creating a five-by-eleven-foot mural made of dried plant materials that was hung on the north wall of the rotunda.

The meeting also marked the 30th anniversary of the Foundation. In honor of the occasion, history volunteers presented a fashion show utilizing clothing from the collection of the Arboretum history section.

In order to allow more complete reports on Foundation business, the membership meeting scheduled for the second half of this biennium was deferred until September.

Two changes in the Foundation By-Laws resulted in additional membership categories, now ranging from $20 for an Annual Membership to $10,000 for an Annual Principal Donor and an increase in dues, which now start at $20.

## Fund Raising and Special Events

The Board of Trustees in the first quarter of this biennium created an Office of Development to conduct a $5 million fund drive. The money is to be used to build the projected Hall of Environmental Education, provide for goods and services needed at the Arboretum and to add to the Endowment Fund.

The Queen Anne Frolic of September, 1977, cosponsored by the California Arboretum Foundation and the Los Angeles State and County Arboretum, was attended by 1,074 persons. Mrs. David Stevenson, Foundation member who chaired the event, reported a net profit of $13,000.

The California Arboretum Foundation won the $350 first prize for its display at the Los Angeles County Fair of September, 1977, and won $350 for its entry the following year.

In August, 1978, the California Arboretum Foundation and the Los Angeles State and County Arboretum together with the Arcadia Chamber of Commerce and the San Gabriel Valley Symphony Association sponsored a picnic and pop concert held in the forecourt area. A profit of $3,000 was divided among the sponsors. The event is expected to become an annual affair at the Arboretum.

Baldwin Bonanzas of 1978 and 1979 netted over $100,000. These annual plant sales are primarily the work of the Foundation's service organizations, Las Voluntarias and Los Ayudantes, and the Los Angeles State and County Arboretum. Approximately 10,000 hours were given by the volunteers to these events, Bonanzas numbers VIII and IX. Las Voluntarias members Jean Atkinson and Marj Roos were chairman and co-chairman respectively in 1978; Marj Roos and Carol Overturf undertook the same positions in 1979 with the assistance of Superintendent John Provine.

## Monetary and Work Services

In the last quarter of 1977, the Board of Trustees of the Foundation voted to contribute $40,000 for goods and services at the Arboretum. The sum was needed to help offset the Department's curtailed budget.

Close to 60,000 work hours were given by Foundation volunteers in this biennium in the following areas:

> Arbor Day, Crafts, Field Leaders, Gift Shop, Greenhouse, Garden For All Seasons, Herbarium, History, Hospitality, Information Center, Library, Mailings, Mapping, Ornamental Horticulture, Research, Tropical Greenhouse.

Following is a list of events co-sponsored by the California Arboretum Foundation and the Los Angeles State and County Arboretum in this biennial period.

| | |
|---|---|
| September 23 | -Queen Anne Frolic |
| October 25 | -Hosts to members of the Annual Congress of the American Horticultural Society held in Pasadena. Members were served lunch at the Arboretum and taken on tours of the grounds by Foundation volunteers. |
| December 23 | -Co-sponsored the Annual Christmas Luncheon for the staff of the Department of Arboreta and Botanic Gardens. |
| May 6, 7 | -Presented Baldwin Bonanza Preview Party for Foundation members and guests and the public Baldwin Bonanza the following day. |

June 10, 11 -Presented the "Spring Extravaganza," two horticultural field days for the public. The Arboretum eucalyptus collection was a feature of the event.

May 5, 6 -Presented Baldwin Bonanza Preview Party for California Arboretum Foundation members and guests and the public Baldwin Bonanza the following day.

In addition to the foregoing, the Foundation sponsored the Arboretum's annual series of Sunday walks and talks and the annual series of 12 daytime mini-courses.

Robinson Garden Estate

Following the death of Mrs. Virginia D. Robinson, wife of the department store magnate, Harry Robinson, the operation of her 6½-acre garden estate was taken over by Los Angeles County. The Department of Arboreta and Botanic Gardens and the California Arboretum Foundation became responsible for maintaining and developing a suitable program for the operation of the Virginia Robinson Gardens, as the property became known. The Foundation was given an endowment of one million dollars for this purpose.

Descanso Gardens Guild

The Descanso Gardens Guild is a non-profit organization composed of private citizens dedicated to serving the interests of the gardens through a variety of work and fund-raising programs.

Membership in the 22-year-old organization had its greatest increase in this biennium, rising to 1,200. This figure represents an increase of 380 new members and three new life members, bringing the total in the latter category to 100.

The increase in membership is one index of the growing strength of the Guild, demonstrated practically by the increase in its contributions to the gardens in this biennial period. Members contributed approximately 12,000 more working hours than in the previous period, and the Guild increased donations to the County in money and services by 13 percent. Following are capsule reports on the principal services and donations:

Building Fund

The most impressive of the Guild's accomplishments in this biennial period is the success of its fund-raising efforts on behalf of a projected million-dollar education-exhibition-administrative building project to be erected on the site of the present entryway. In less than two years, the Guild raised close to $700,000, an amount large enough to warrant confidence that construction will start within the first half of the next biennium.

The largest of several sizable gifts contributed through the Guild's fund-raising efforts was $100,000 from the Ahmanson Foundation. From its own resources, the Guild was able to pay $10,000 for architectural fees and drawings.

## Education

Each year, the Guild sponsors and conducts a variety of educational activities for children and adults, including training classes for their own docents. In this biennium, Guild docents gave garden tours to 10,000 children representing 153 school districts. Additionally, the Guild sponsored horticultural mini-classes for adults, a number of art and cooking classes, and an adult tour to Costa Rica. A major educational effort by the Guild are the annual gardening classes for handicapped children from schools in the surrounding communities.

## Special Events

The Guild contributes significantly to the attendance at the Gardens through the many special events it stages and sponsors. In this respect, collective total attendance in this biennial period was 125,000. Heading the list was the annual Christmas show, a nine-day event which in 1978 attracted 23,000 people. Additionally, the Guild sponsored 20 musical events, two theatrical events for children and two arts and crafts festivals.

## Donations and Services

Guild donations in this biennial period totalled $35,780. The principal donations were in the form of plants, horticultural and garden supplies, and Hospitality House maintenance and repair. Principal services were in the form of speaker programs, memorials, and general work services. In this latter category, Guild members contributed a total of 43,400 hours, the work divided among assistance at flower shows, gatehouse and gift shop staffing, plant propagation, and Guild special events headed by the Christmas show.

## Southern California Camellia Council

The Southern California Camellia Council is a second support organization for Descanso Gardens. Council affiliates are: The Los Angeles Camellia Society, Orange County Camellia Society, Pacific Camellia Society, Pomona Valley Camellia Society, San Diego Camellia Society, Southern California Camellia Society and the Temple City Camellia Society.

The Council and its affiliates stage the major show of the year at Descanso and one of the major floral events in the country, the annual Camellia Festival. Council members contribute hundreds of volunteer hours in preparation, staging and cleanup for the show. Members also assist the Garden's staff in the arduous annual task of trimming the thousands of camellias in the camellia forest.

## South Coast Botanic Garden Foundation

The South Coast Botanic Garden Foundation is similar to the California Arboretum Foundation and the Descanso Gardens Guild in form and purpose. Formed in 1961 by a handful of citizens dedicated to assisting in the development of a botanic garden built over a rubbish dump and onetime diatomaceous earth mine, its membership has accelerated in growth, reaching a current figure of 920, an increase of 400 members in this biennial period.

The annual basic membership fee has been $10. A change in the By-Laws in November, 1978, increased this amount to $15 and $25 for a family. Membership brings free admission to the garden, a free plant at the annual membership meeting, receipt of Garden magazine, the bimonthly national horticultural magazine, receipt of Com-Post, the Foundation's quarterly newsletter, and a reduction in fees for education courses.

The general business of the Foundation is conducted by a Board of Trustees which meets monthly. A Board of Counselors was reactivated in 1977, at the request of the trustees. The Board aids in the affairs of the corporation and is composed of business and community leaders, college professors, active garden volunteers, and members of the news media. There are currently 48 counselors.

## Building Fund

In furtherance of its pledge to raise $200,000 toward payment of construction costs for the new Administrative-Public Services Center, the Foundation paid the County $32,000 in this biennial period. An additional $10,000 is expected to be paid in the last quarter of 1979, leaving a final payment of $148,000.

## Donations and Services

The Foundation made cash donations of $12,236 in this biennium as follows: $1,400 for garden improvements, $1,836 for tram repair, and $9,000 to the Department for supplies and services to the garden.

Amigos del Jardin, the volunteer arm of the Foundation, gave 33,000 hours of work in this biennial period in the following areas: tour guides, clerical, information, special events, membership, press, crafts workshop, propagation, displays, gift shop, garden maintenance, volunteer garden. Members of the garden maintenance group assist staff personnel in cleaning, weeding, watering, and beautifying the garden. Members of the volunteer group developed an approximately 80-foot-square demonstration garden near the tram-waiting area. Named "El Jardin del Pueblo", it is planted with seasonal vegetables and flowers, thereby demonstrating that in southern California it is possible to enjoy colorful flowers and edible plants the year round.

## Education

Foundation docent tour guides conducted walking tours of the garden for 12,079 children in this biennial period and a number of special tours for community organizations and senior citizens.

During the 1977-78 school year, four classes for adults were sponsored together with the Los Angeles Harbor College. Due to an increase in tuition at Harbor, the Foundation became the sole sponsor of classes the following year. Courses were offered in container gardening, bonsai, ikebana, flower arrangement, bromeliad culture, wreathmaking, fuchsia culture, and indoor plants. Total enrollment was 232 students, net tuition was $1,000.

## Special Events

The major special event at the garden each year is the Foundation sponsored Fiesta de Flores, held the past two years on the third weekend in May. It has become mainly a giant plant sale and, as such, the most lucrative of the Foundation's fund-raising events. Profits were $13,000 in 1978 and topped $15,000 in 1979. Other fund-raising events in this biennium were: Discovery Walk (1977), a garden walking tour and luncheon featuring a talk by L.A. Times book editor, Art Seidenbaum; Bienvenidos (1978), an early California festival. These two events netted $5,000; Holidays in the Garden, the annual Christmas exhibit, showed a profit of $1,000 for both 1978 and 1979. A lecture-tea by Dr. Mildred Mathias in 1979 netted $550.

In September, 1977, the Foundation introduced a new weekly program called Sunday Afternoons at the Garden. This admission-free program has offered a range of lectures, demonstrations, bonsai exhibits, flower shows, musical programs and the like, all proving popular with the public and helping to increase attendance.

## Gift Shop

The Foundation gift shop opened for business on the Fiesta de Flores weekend in May, 1977. It has proved a successful venture from the beginning, earning $4,200 in its first year of operation and approximately $5,000 the second year.

DEPARTMENT OF ARBORETA AND BOTANIC GARDENS

F I N A N C I A L  R E P O R T

1977-79

DEPARTMENTAL SUMMARY

1977-78

| | APPROPRIATION | EXPENDITURE | BALANCE |
|---|---|---|---|
| Salaries & Wages | $1,715,184 | $1,706,806 | $ 4,319 |
| *(Expenditures Applicable to prior year) | | *4,059 | |
| Services & Supplies | 148,228 | 157,713 | (-9,485) |
| Capital Outlay Equipment | | * *25 | (-25) |
| TOTAL DEPARTMENT | $1,863,412 | $1,868,603 | (0$5,191) |

Number of Budgeted Positions - 127.9

1978 - 79

| | APPROPRIATION | EXPENDITURE | BALANCE |
|---|---|---|---|
| *Salaries & Wages | $1,743,459 | $1,664,336 | $79,123 |
| **Services & Supplies | 127,255 | 122,414 | 4,840 |
| Capital Outlay Equipment | | | |
| TOTAL DEPARTMENT | $1,870,714 | $1,786,751 | $83,963 |

Number of Budgeted Positions - 108.9

*Adjusted Appropriation (Salaries & Wages)
**Adjusted Appropriation (Services & Supplies)

The passage of Proposition 13 in June, 1978, resulted in some cutting back of public services and grounds development in the Department of Arboreta and Botanic Gardens.

During the four years prior to Proposition 13, department staffing was reduced from 150.5 budgeted positions to 127.9 as of July 1, 1977. Subsequent to Proposition 13, the Department staff dropped to 108.9 or a further loss of 19 budgeted positions. Recruitment was generally curtailed and positions frozen as they became vacant. Although some additional CETA positions were approved, overall department workload grew due to the reduction in permanent staffing and the departure of a number of longtime permanent employees for jobs in the private sector.

In this biennial period, the Department concentrated on maintaining plant collections, ground covers, lawn areas, and other botanical features at the minimum effective level of plant tolerance. In the wide range of public services provided by the Department, the main losses were in the youth and adult education program; beyond this the public has continued to be served largely as in the past.

A major effect of Proposition 13 was the first-time imposition of admittance fees at all department gardens. This had an immediate effect on the public, bringing a reduction in attendance illustrated in the figures below.

| | Fiscal Year | | |
|---|---|---|---|
| Facility | 1977-78 | 1978-79 | Attendance & Percentage Loss |
| Arboretum | 713,102 | 529,724 | -183,378 25.7% |
| Descanso Gardens | 370,302 | 235,983 | -134,319 36.3% |
| South Coast | 115,749 | 70,571 | - 45,178 39.0% |
| Department Total | 1,199,153 | 836,278 | -362,875 30.3% |

The above are gross figures incorporating school field trips, education classes, society meetings, special evening events, and employee, business visitors and other repeated in-and-out passage through the turnstiles. As a consequence, they cannot be used as a basis for projected revenue. Further complicating a useful relationship between total attendance and revenue collected are such matters ad admission fee differences at the three facilities, free admission on the third Tuesday of each month, reduced rates for children, students and senior citizens and revenue from tram fees.

For the present, anyway, the only reliable guide to potential revenue is the revenue collected (tabulated below) in the first twelve months of the fee policy.

August 1, 1978 - July 30, 1979

| Facility | Admission Revenue | Trams | Group | Total |
|---|---|---|---|---|
| Arboretum | $225,088.50 | $52,317 | $3,731 | $281,136.50 |
| Descanso Gardens | 75,542.75 | 19,593 | 110 | 95,245.75 |
| South Coast | 32,833.50 | 4,023 | 425 | 37,281.50 |
| TOTAL | $333,464.75 | $75,933 | $4,266 | $413,663.75 |

The total revenue figure, $413,663.75 is approximately 23% of the department's total budget of $1,748,334 approved for the 1978-79 fiscal year. This percentage can be expected to increase as the public becomes adjusted to the newly imposed fees and through a program of special package tours to the Arboretum introduced in the latter part of the 1978-79 budget year. This latter program is expected to increase revenue approximately $2,500 per month.

| | Current Fee Policy | | | |
|---|---|---|---|---|
| Facility | Adults | Children/ Students | Senior Citizens | Tram | Groups other than schools |
| Arboretum | $1.00 | $ .50 | $ .50 | $1.00 | $10.00 |
| Descanso Gardens | .50 | .25 | .50 | 1.00 | 10.00 |
| South Coast | 1.00 | .50 | .50 | 1.00 | 10.00 |

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## CALIFORNIA ARBORETUM FOUNDATION

77-78 - Mrs. Ruth Mary Larson, President
78-79 - Mrs. Ruth Mary Larson, President

## DESCANSO GARDENS GUILD

77-78 - Mrs. Nancy Dunn, President
78-79 - Mrs. Randy McDonald, President

## SOUTH COAST BOTANIC GARDEN FOUNDATION

77-78 - Mrs. Helen Pickett, President
78-79 - Mrs. Helen Pickett, President

## SOUTHERN CALIFORNIA CAMELLIA COUNCIL

77-78 - Mr. Mel Gum, President
78-79 - Mr. Grady Perigan